

AN INVESTIGATION ON LANDSCAPE STRUCTURES IN IRANIAN NEW TOWN DEVELOPMENT

The case of Fuladshahr New Town (1963-2013)

Azadeh Badiee

KU Leuven / Leuven, Belgium

Abstract

This paper intends to explore the changes made to the urban landscape of Fuladshahr New Town in Iran by focusing on (mainly public) strategies and initiatives elaborated with regard to two particular urban development momentums. Firstly, the experiences of the pre-Islamic revolution of 1979 under the shah's regime and secondly, developments occurring after the Iran-Iraq war period. The exploration draws on two different levels of analysis, namely the large-scale of the metropolitan region, the medium-scale of the New Town in each stage of time.

Rapid urbanization and the rural-urban migration during Iran's modernization forced the government and urban decision makers to offer an array of different solutions for housing and infrastructure provision at each paradigm shift. From construction based on political security and industrial growth to regional decentralization in order to control the overflow of population in large cities, these strategies have all been considered in Iran's New Town development. Most recently, the government provided affordable housing (known as Mehr housing) is the main agenda under which New Town development is implemented throughout Iran and around Tehran.

This contribution offers an alternative reading of the above-mentioned development strategies by focusing on the landscape characteristics that acted as a support for past urban developments and are no longer relied upon when developing Iranian New Towns. Methodologically the paper applies inductive and descriptive approaches in which will not only analyze Fuladshahr's degrees of flexibility over a period of time, but will also investigate the role of landscape in the New Town's evolution. Using mapping methods, the landscape will be highlighted in the role it has (or not) covered in Fuladshahr's urbanization, and the type of urbanity that has consequently been generated.

Keywords: New Town, Urban Landscape, Iran, Fuladshahr, Urban change

Introduction

Pre-revolutionary Iran's economic development was rapid. A traditional agricultural society, had achieved significant industrialization and economic modernization by the 1970s, largely aided by the growing worldwide demand for oil.¹ By a look at the urbanization process and the booming in the population growth the city sizes and extensive rural to urban migration all ended with the growth in the major cities and resulting an increase in the number of cities in these years. The growth in the number of cities were not the same as the growth in the population of the major cities such as Tehran, Mashahd, Isfahan and Tabriz. These cities continued to be the main attraction for the migrates and the size of the cities were also passed its desirable limits. The modernization movement with regard to the industrialization of the cities ended up by expanding the city territory toward consuming the nature and the landscape around the city, where the productivity of the people and therefore the culture were starting from. By an investigation in the history of historical cities in Iran, the dominant of landscape characteristic is noticeable and illustrates the various impacts of landscape as a structuring element in the different scale of spatial development and therefore in the cultural and social dimensions.

Isfahan as the Iran third largest city has a noticeable history in interrelation with landscape in every aspect of development. Since the 17th century Isfahan spatial and social configuration has changed a lot and this evolving in each stage of time is a consequence of political and social changes that were appearing in that time frame. The development of the region since the modernization period was concentrated in new town development, but in each stage of time concerning different agendas. The Isfahan urban growth process followed certain changes in the spatial and social configuration of the region in which cannot be read without its interrelation with landscape as a platform where all these transformations and evolving are happening.

Fuladshahr New Town as the first New Town which was designed in Isfahan region has faced different development strategies with regard to two particular urban development momentums. The complex interplay of socio-economic and

¹ CIA World Factbook (February 2012)

ecological process, has shaped landscape as a medium of exchange in which it formatted a complex network of political, social and cultural identities.

'The challenges to the region are immense and need to be understood in all their complexity in order to then propose feasible alternative and strategic projects.' (Shannon, 2010, p.94) In addition to Shannon argue about understanding the process of urban development, testing the thesis of landscape urbanism as a means by which the fundamental questions about the contemporary city and new ways of intersection of physical and social processes of territorial formation will be investigated in order to generate new forms of urban typologies and knowledge. Shannon also brings out the importance of understanding the region's history in order to learn lessons from the interdependent relationship to landscape. *'Recognition and abstraction of the idea of synergy between urban and rural, the consumptive and productive landscapes, can become a guiding principle for new urbanization.'* (Shannon, 2010 p. 148)

The first part of this research is a short exploration of historical studies on Isfahan development in order to highlight the framing elements of the early stage of Urbanism in the region. Later it will explore the development motivator in the contemporary Urbanism during the pre-revolution and post-war period in the New Town of Fouladshahr in order to reveal the role of landscape in the urbanization process of Iranian New Town development spatially Fouladshahr case. This research investigates the role of landscape in the New Town's evolution that acted as a support for past urban development and are no longer relied upon.

Maktab Isfahan, reframing a territory

After selection of Isfahan² by Safavid dynasty as the capital of Iran by the end of the 16th century, major urban design strategies were applied in order to give a framework to the previous and future urbanization of the region. The integration

² Isfahan City located about 340 km south of Tehran and is the capital of Isfahan Province and Iran's third largest city. The city has a population of almost 1.600.000 people. It is Situated in the central part of Iranian Plateau at the eastern foothills of Zagros mountains and lush plain of the Zayandeh(Birth giving river) River. Heading north with a slight deviation to the west it goes towards foothills of the Alborz mountain range and Tehran. The eastern boundry of the city almost touches the Great Kavir and Gav khooni marshlands several minor basins with infrequent desert stretches.

of the new development with the organic historical city, created an organization that has been an example for Iranian Urbanism since then.

The formation of Safavid dynasty followed by '*Maktab Isfahan*' in urbanism can be compared with the reinforcement of central Europe after the Renaissance and the creation of Baroque in the 18th century. When intellectuals and innovators are still struggling to structure their medieval towns and building their '*Ideal-City*', '*Maktabe Isfahan*' has built its ideal model and depicts a sharp and clear portrait of what exists and what is appropriate. (Habibi, 1996)

Maktab Isfahan (Isfahan School) was a combined design of new and old city with the following characteristics: the new garden city of Isfahan got connected to the old city centre via a new structuring spine. This urban corridor (Chahar Bagh) works as a north south link between river as an ecological gate for the city throughout a sequence of gardens and public spaces toward the old urban fabric of the city. The designation of three neighbourhoods for the development of the city was also part of the new plan in which for the first time in the history of urbanism in Iran river has become a natural east west corridor in which the urbanizations are located in the northern and southern part of it. A closer look at this integration of old and new reveals the relation of historical irrigation technology to the new urban structure. 'These irrigation channels named '*Madi*³' had major impacts in water management and transfer to agricultural fields and to the gardens of Isfahan. '*Madis*' were a dendritic irrigation system that branched from the river and supported the production of cultivated lands and royal gardens'. (Tabrizian, 2010)

The intertwined design of the historical natural system with the perpendicular connection between the river as a natural resource and new urban development and the old city resulted a new urbanization which embraces the landscape characteristics into cultural and spatial perspective.

³ "*Madi*"s were dendritic irrigations systems branched from the river to agricultural plots and royal gardens. MADIs are essential in agricultural, Industrial and urban development in Isfahan. (Isfahan Water Administration 1993), the MADIs provide 91% of agricultural, 4% of industrial and 5% of urban water requirements .there are seventy seven MADIs branched from left side (north) of Zayanderood river while there are only seventy one MADIs branched from right side (sough).(Sattari et al.. 2003).

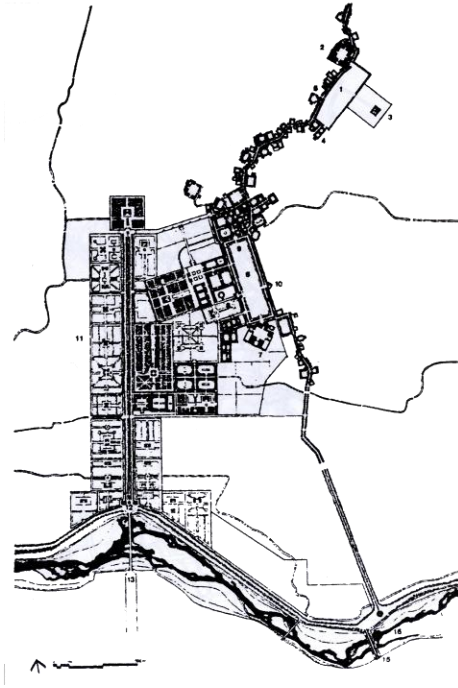


Figure 1. Isfahan and main structuring elements during Safavid dynasty. (Habibi, S., Ahari, Z., 2012). The integration of river to the old urban fabric and the royal gardens in Isfahan.

New Town a feature of modernity

A new approach of New Towns derived from the utopians and the ideas of Howard. *'New Towns are successors to Howard's social city as a regional planning model and address the urban form and economy, as well as the social structure and municipal organization.'* (De Klerk, 2006, p.7) New Towns had different purposes in the developing countries such as instruments for restructuring and de-concentrating the population of rapidly growing metropolitan regions (Atash, 2000, p. 68). The New Town development in Iran can be divided into two periods, the pre-revolution and post war period.

Before the revolution, New Towns were built on political-military criteria, including residences for industry employees, linked to the strategy of industrial development, and directed at the housing problem of civil servants. After 1979, however, the aims of building turned to controlling population growth in large cities, absorbing the population overflows of

those cities, housing the low-income people as well as the employees in the industrial sector, giving a redistribution to industries, and protecting the farming lands around large cities. (Ziari, 2006, p.413)

From the end of 1960s till the revolution of 1979, due to the boom in the oil industry and new economic sectors in Iran, the urban population of Iran had a dramatic increase. New company-industry towns and satellite towns in the periphery of mega cities were implemented. These New Towns were built within a reasonable distance from the mother cities and they were not dependent on any primary rural nucleus. Fuladshahr is located 40 kilometres west of Isfahan and 15 kilometres east of the steel mill complex and in short distance to iron ore and coal deposits. *'This town was planned by Giprogor Company of the former Soviet Union in 1968 under a master plan for the accommodation of the workers of large steel mills.'* (Art and Architecture, 1975, p. 55)

In regards to the industrialization of the Iranian economy, the socio-economic and cultural activities were more focused on this means of production. The location of the Fuladshahr New Town was in an accessible distance to the steel mill company and located in a non-productive land between the western mountains and eastern agricultural fields of Isfahan region. The proposed master plan divided the development of Fuladshahr into two phases, one with the proposed population of 50,000 people in the south and the second phase of 250,000 people in the northern part of the city. The city proposed nine districts and the total of 49 neighbourhoods in which each had population ranged from 3,000 to 5,000 people with different density from four to ten story buildings. Each district proposed to have a service center surrounded by a large open space that are linked to each other. A canal designed to enter the city in order to connect the city to the river for recreational and irrigation purposes.

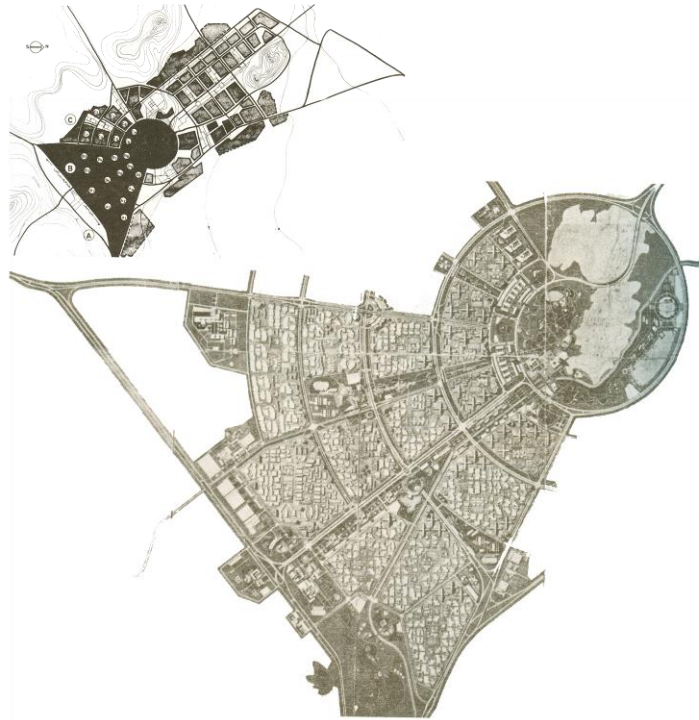


Figure 2. Fuladshahr (Aryashahr master plan) Comprehensive plan and Master plan. (Art and Architecture Review, 1975, No. 12, Tehran) The New Town consists of two phases which the Master plan was designed for the phase 1 before the revolution of 1979.

The master plan proposal for the social configuration of the New Town was that the total employed population constituting one-third of the total population of Fuladshahr in a way that 80% of the population were expected to be technicians and workers and 15% to be the administration employees working in the Steel Mill Complex and its related industries.

From plan to action

An understanding of the urban landscape of Fuladshahr can be seen by a critical look at the interdependence actions which happened during the process of development and shaped the spatial and social relationships. In this regard the dynamic processes that shaped the spatial and social relationships will be explored to get to a certain understanding of urban landscape characteristics from the large scale of territory to the city scale of the New Town. *'Landscapes*

emerge from specific geographical, social, and cultural circumstances; that landscape is embedded in the practical uses of the physical world as nature and territory'. (Jackson, in the introduction by Cosgrove, 1998)

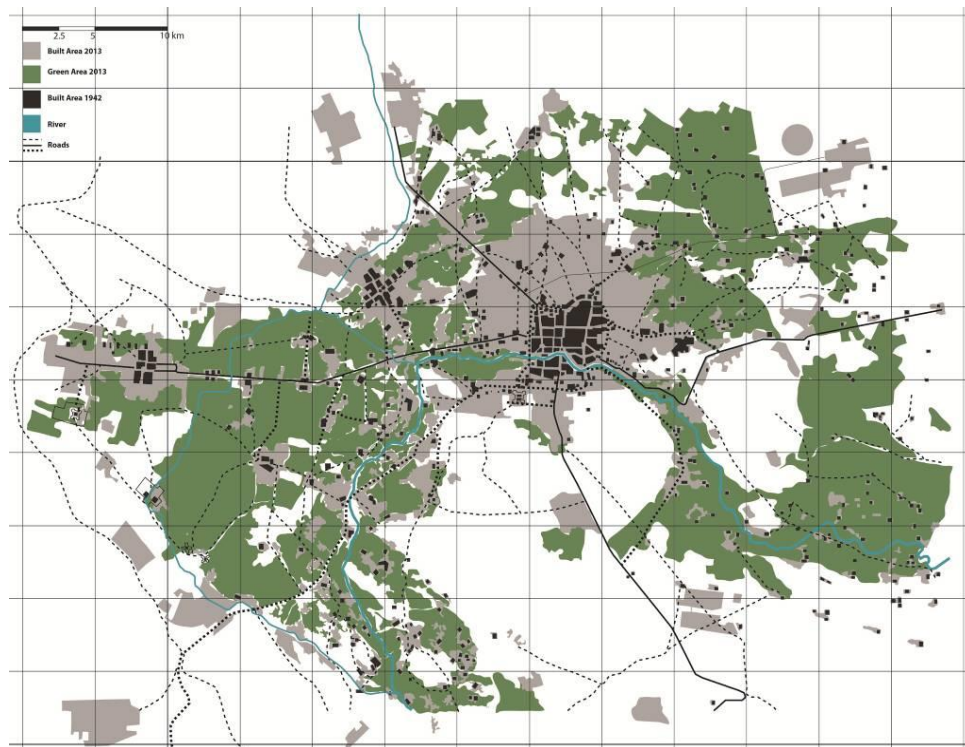


Figure 3. Isfahan Region Growth, 1942-2013. (Source: the author). The growth in the region and specially in the settlements closer to water and agriculture as means of production.

The Pre-Revolution development and characteristics

Fuladshahr construction of the phase one started in 1968 and although a substantial level of funding was provided for the development, by the late 1970s the total completed houses with settled population was for 10,000 people. The practical challenges that experienced in the process of development in the pre-revolution era is related to the socio-economic strategies proceeded in the scale of New Town and the territorial region.

According to the master plan of Fuladshahr, only the employees of the steel mill complex could qualify for living in Fuladshahr and while the development was in parallel to the territorial rural to urban migration in the region, the housing

supply of the only New Town of the region could not be used for the need of the region. On the other hand, the housing market of Fuladshahr was not attracting the small and large private investors due to the fact that the housings provided in the New Town were only for rent and therefore the shift in the means of production in the region from agriculture to the industrial practices could not influence the territorial scale. Accordingly the growth of population and the city expansion was conducted in the smaller scale cities and villages within the short distance from the industrial complexes around the city of Isfahan for the job seeking population of the region. *'The region restructures itself to remain competitive and cooperation networks between a region's institutions and enterprises'* (Sassen, 2000, pp. 43) which is in the Isfahan region the shift from natural productivity to the industrial productions in the pre-revolution era shaped the urban landscape of the region. *'A regional project needs to serve various parties thus provide a basis to identify and integrate diverse aspirations and ambitions of private investors, public authorities and multiple civic interest groups. The regional research project thus becomes an exercise in the progressive development of shared insight.'* (N. Meijsmans, 2010)

Considering the development in Fuladshahr New Town, the urban spaces on the city scale directs the focus towards the relationships between urban development, spatial condition and ecological processes of the city area. It becomes plain that, in these broader relationships, social processes are part of urban spatial development. *'The emphasis on urban processes is not meant to exclude spatial form but rather seeks to construct a dialectical understanding of how it relates to the processes that flow through, manifest, and sustain it'*. (Corner, 2002) *'This understanding – of the connections between landscape development and urbanization processes – is currently demanding renewed attention and has been taken up by the Landscape Urbanism School'*. (Waldheim, 2006)

One of the spatial characteristics of the housing developed during the pre-revolution in Fuladshahr was the housing typology which according to the original master plan *'assigned one-third of the population to four- to ten-story apartment buildings in neighbourhoods with an open layout.'* (Atash, 2000) Since most of population targeted to live in Fuladshahr were the workers and technicians of the steel mill complex they didn't have the experience of living in the apartment

spatially with the open layout which was in contrast with the socio-economic and cultural background of the residents from the privacy and inconveniency of the high-raised apartments. The Fuladshahr designers and planners assumed the employees and the residents of the New Town would have small family size and therefore the size of the housings and the number of bedrooms became a major concern for them. Therefore the problem of inadequate living space forced the residence to change the plan of living spaces in order to accommodate their needs, such as adding the balconies into the indoor spaces. In addition to the housing size, the lack of privacy in the semi public spaces made the development and spatial process slower than the initial plan.

During the phase one of the development, the south eastern neighbourhoods part of district A and B were developed which was in close relation to the designed water canal going as an irrigation and aesthetic for the public spaces and green pockets in the neighbourhoods. This intervention has helped the neighbourhood to get integrated into the nature and having a better weather. This neighbourhood, which is mostly inhabited by the higher income employees of the Steel Mill Complex, having the low raised housing (courtyard houses) with more privacy in their access to open spaces and courtyards. The applicants who were interested to live in Fuladshahr were mostly belonged to the middle and low income workers and the rest had more interest in renting or buying houses in Isfahan city and they were able to commute by their private car daily to the Steel Mill Complex. This is another discouragement for the investors to develop the less compact neighbourhoods and having delays in completing the development spatially in the non-residential uses. This can be seen as another spatial characteristics of the plan that leads to the social differentiation in the pattern and multiple typology of the neighbourhood.

The Post-War period - A new paradigm for urban change

The Islamic revolution of 1979 and the Iran-Iraq war within a year after in 1980 has brought a lot of changes in the urban process of the Isfahan region and Fuladshahr as the young New Town in the very strategic location. The flow of war victims⁴ to settle in the central cities of Iran such as Isfahan region was a major

⁴ The invasion of Iraq to the border cities of South West of Iran such as Ahvaz, Abadan and Khoramshahr forced the inhabitants of these cities to live their houses and move to the central

contributing factor in massive growth of the Isfahan city and its New Town Fuladshahr. The unexpected in-migration was a major practical challenge that surrounded Fuladshahr during that period of time.

Projects or additions and changes to its existing structures and neighbourhoods that either were not proposed in the master plan or did not meet the requirements and the standards of the plan. These additions and changes resulted in the development of neighbourhoods, mostly in District A, that were sub-standard and lacked the necessary public uses and activity areas. (Atash, 2000)

The low-income migrants from the war-damaged areas were mostly inhabited in neighbourhoods were physically, socially and economically different from those in District B that were built according to the original master plan and inhabited by the employees of the Steel Mill Complex and nearby industries. In some cases, they had to live in the under construction apartments and choose an un-finished apartment and some families had to leave together. The new social configuration in the city this time shaped a new spatial configuration for the young New Town and created new features in the vision of the neighbourhoods and the city.

'The 1986 census counted the population of Fuladshahr at 28,728, with the majority working primarily in the Esfahan Steel Mill Complex and its nearby industries.'(Atash, 2000) The Isfahan Region's 25 year master plan, designated Fuladshahr as the second largest urban centre in the region in 1986, and recommended that the New Town has no longer work as a dormitory New Town and has to be a self contain and dynamic New Town with a future population of 500,000 inhabitants by 2010 in an area of 7,000 ha.⁵ In order to fulfil this goal, two important changes were implemented in Fuladshahr, one was according to spatial configuration in relation to the problems with high-rise apartment, they decided to limit the building typology to four-story apartments and one-two story single family units and in this way they re-designed a major part of the original master plan of Fuladshahr. Since the second phase of development was

cities of Iran in order to live with their families or strangers with a will that the war will end within a short period of time, while this misplacement lasted long for 8 years and most of these people lost their houses in the bombing over their houses and had to stay in the place they were not culturally belonged. These migrants they were not always welcomed in the new neighborhoods and they had difficulties in order to find appropriate settlements to live in.

⁵ Fuladshahr New Town Development Company, 1992

parallel with the new government and strategy in the country by president Rafsanjani, the New Town followed the governmental slogan of 'Construction' therefore the City Land Organization allowed the investors (private and public) participate in the development of Fuladshahr and for the first time the housings provided in the New Town could be purchased.

'The end of the war with Iraq coincided with the implementation of the first Five-Year development plan for the period of 1989–1993.'(Ziari, 2006) *'The plan identified economic growth and efficiency as its most important objectives; others included controlling population growth, optimizing resource exploitation and the completion of unfinished projects.'* (Amirahmadi, 1996, p. 123) *'The government decided to prepare the second development plan for the period of 1995–1999. It placed top priority on economic growth and did not address its spatial dimension and performance. The second plan emphasized industrial growth in areas with an adequate infrastructural base.'*(Ziari, 2006) therefore the establishment of the New Towns located near the large cities in 1986 in order to address New Towns to absorb the surplus population of these cities. In this regard, the Ministry of Housing and Urban Development announced construction of 18 New Towns which they are located in the areas owned by the state. Although Fuladshahr was established as a company Town, but according to its location and access to main industrial hubs of the region was selected as one of this New Towns beside two other New Towns of Baharestan and Majlesi with 15 and 65 km distance from the city of Isfahan.

The revised master plan targeted the middle and upper middle class population to live in the New Town and it was mainly focused on households working in the nearby industries. An adaptation of the plan to the new economic changes, which was the result of the war related national problems, seemed necessary at that time in order to attract a new population with different social background to Fuladshahr. The fast growing rate of population in this period and the high-price of land in the city of Isfahan attracted the house seeking families to the New Towns around Isfahan region. By a close look at the location of the three New Towns of Isfahan and their succession in absorbing the population, the parameters of the distance from the major city and their accessibility to the means of production were the key points in that stage of time.

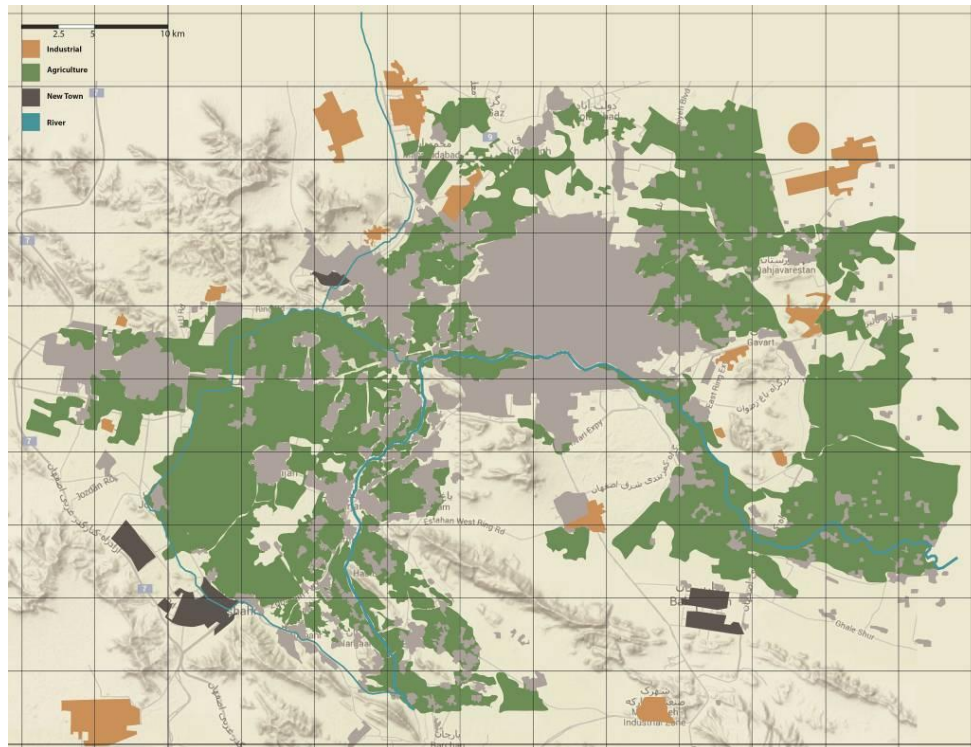


Figure 4. Productive Landscape. (Source: the author.). The location of New Towns and their relation to the means of production in comparison with the other Cities in the region shows the intense relation of productive landscape and urban growth.

The Justice Era - The Time for The Low Income

The population of Fuladshahr New Town according to the Company of Iranian New Towns in 2002 was 45,000 people, which shows the growth rate of 18% and the number of migration from other part of Iran specially Isfahan region to the city, but on the other hand, according to the second master plan of the city the target population by the year 2010 should reach the 500,000 that means a major part of the New Town was still waiting for further developments.

The age pyramid of Iran demonstrates the widest category in the age between 25-35 which are the generation were born during the war and after the 1979 revolution. This huge number of the population who are in the age of marriage and independence have a massive need for housing and job. This is in parallel with the declining family size of the Iranian family, therefore more housing units

are needed.⁶ Considering the economic crisis and the inflation due to the western sanctions against Iran, finding housing in the major cities for young families and low income households became impossible. At 2006 by the beginning of the Ahmadinejad government, his major propaganda for satisfying his followers (as a populist president) was the introduction of affordable housing projects known as Mehr Housing which is the 99 years leasing housing on the governmental lands outside of the major city limit. New Towns, due to their unfulfillment in attracting the population could provide a number of available lands for developing the Mehr Housing project.

Mehr Housing Project targeted the free lands in the northern part of Fuladshahr in the district D, where in the first and second master plan was placed as the last phase of development and therefore had the least infrastructure ready (almost empty land). The number of 32,000 housing units⁷ which were designated to be built in Fuladshahr are mostly following repeating pattern of eight to ten storey high apartment arranged along a relatively wide infrastructure grid create a uniform environment in District D consisting of 10 neighbourhoods. The main north-south access of the city which works as the main spine for connecting the open spaces and public facilities is connecting the core of the Mehr District to the old city centre of Fuladshahr.

The introduction of new housing typology of the new District of Fuladshahr and its distance from the main activities and recreational centers, and the most important one, means of production, brings out the question of spatial integration of the new development of the city. Although the New Town showed a high level of flexibility during the last four decades of development through different political and social configuration, access to a productive landscape of agriculture and later industries were the key for the calibration of the city and following in the social formation of it. But now the new pattern of homogenous living style with their concentration on the same needs requires a new means of production in order to be able to compose new spatial and social characteristics of the city after passing various changes.

⁶ Journal of Housing Economics, (2011). No 47-48

⁷ Fuladshahr New Town Company 2013

Interpretation Toward Construction

Maps can do more than depict the interrelationships of urban landscapes; through the ways and means by which these relationships are depicted they can influence the way such space is conceived. In this, maps are never a neutral presentation of a given reality but rather present a particular concept of space and thus also construct it. (Löw, 2007, p.68)

With a focus on landscape characteristics of urban development, it comes to observation and comprehension that the spatial conditions of landscape has an exchange with the urban development of the city. As Cosgrove argues, '*Landscape as symbolic systems and as ways of seeing needed to be seen in relation to 'social formation'*'(Cresswell, 2003) hence the sequence of the social and cultural circumstances that had occurred during the practical uses of the spatial spaces of the city has shaped the landscape of Fuladshahr. This process of evolving and adaptation has formulated a complex network of political social and cultural identities where can be seen as a landscape of inter-relations. '*Landscape ... as a mosaic of the "total spatial and visual entity of human living space" that integrates the environment, living systems, and the man-made*'. (Corner, 2006, p. 61)

The spatial formation of Maktab Isfahan had followed the cultural characteristic of productive landscape of the River and agriculture following the social and cultural activities in the city during the 17th century, while the landscape of Fuladshahr New Town in the 20th century, followed the new industry as the new mode of production and consequently the social and spatial production which came as the result. In the territorial scale, the Isfahan regional growth during the last 6 decades shows a continuing correlation of the urban expansion of Isfahan and the small and large size cities around it in relation to the means of production and centrality and accessibility of this landscape. The spatial feature of the region (the topography, river-shape and the agriculture) has structured the settlements in the region and although the master plan had tried to put a limit for the city growth, the consumption of agriculture fields and an excessive growth of the major cities such as Najafabad and Khomeinishahr are clear (Fig 3).

In the scale of Fuladshahr New Town, the influence of the social configuration of citizens, to some degree, has shaped the spatial structure of the city. Different political and cultural ideologies brought different typologies and spatial characteristics for Fuladshahr. The level of ownership and access to common uses has shaped a new landscape which gives the possibility of an alternative understanding of the New Town. The way landscape circulates as a medium of exchange, a site of visual appropriation, a focus for the formation of identity. (Mitchell, 2002)



Figure 5. Fuladshahr Evolution. (Source: the author). The typology of residential buildings and their access to open spaces and their share of nature is shown during the three phases of development in the New Town.

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Author identification

Azadeh Badiee. *Qualified as an architect at the department of Architecture and Urban Planning, Art University of Tehran, Iran and holds an advanced master of Urbanism and Strategic Planning from KU Leuven, where she is currently a PhD student.*